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# SOME PROBLEMS IN MEASURING ORGANIZATIONAL COMMUNICATION

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**13 ABSTRACT**

Research concerned with organizational communication is at a stage of development where mapping the communication domain is a prerequisite to relating its dimensions to other organizational variables.  Some of the problems involved in, and past efforts concerned with measuring organizational communication are discussed here.  One further approach to measurement is then described.

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| 14. KEY WORDS | LINK A | | LINK B | | LINK C | |
|---|---|---|---|---|---|---|
| | ROLE | WT | ROLE | WT | ROLE | WT |
| Desire for interaction | | | | | | |
| Information flow directionality | | | | | | |
| Information summarization | | | | | | |
| Interpersonal trust | | | | | | |
| Measurement of organizational communication | | | | | | |
| Mobility aspirations | | | | | | |
| Modality use | | | | | | |
| Organizational communication | | | | | | |
| Perceived influence of superior | | | | | | |
| Perceived information accuracy | | | | | | |
| Perceived information overload | | | | | | |
| Propensity to withhold information | | | | | | |
| Satisfaction with communication | | | | | | |

SOME PROBLEMS IN MEASURING

ORGANIZATIONAL COMMUNICATION

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# SOME PROBLEMS IN MEASURING
# ORGANIZATIONAL COMMUNICATION

Communication, in one form or another, occupies
most of a manager's time and possibly that of other workers
(Burns, 1954; Kelly, 1964; Klemmer & Snyder, 1972).  At
one time or another almost any manager can be heard dis-
cussing problems in supervision, decision-making, coordina-
tion, or morale, which he attributes to "poor" communica-
tion.  If communication does cause organizational dysfunc-
tionalities, it is worth examining in some detailed,
systematic fashion.  If "improved" communication does have
beneficial effects on individual attitudes and organiza-
tional performance, it should be measured.  However, this
cannot be done nor can communication be related to other
organizational variables until its various facets are
identified.

Organizational communication is what Dubin (1969)
would refer to as a summary variable including a variety
of phenomena involved in information transmission, attribu-
tion of meaning to that information, and consequent response.
Research efforts concerned with organizational communication
are at a stage of development in which mapping the commun-
ication domain is a prerequisite to relating its dimensions

1

to other organizational variables (Guetzkow, 1965; Porter

& Roberts, in press; Roberts, O'Reilly, Bretton &

Porter, 1973; Thayer, 1967). Here we discuss some of the

problems involved in and past efforts concerned with

assessing organizational communication, and provide one

further approach to measurement.

### Measurement Problems

At least two major difficulties exist for the

organizational researcher interested in communication.

One concerns the kinds of other organizational variables

which should be related empirically to communication to

extend our knowledge in this area. This problem is dis-

cussed elsewhere (Farace & Russell, 1972; Porter &

Roberts, in press; Roberts, O'Reilly, Bretton & Porter,

1973). A preliminary and more fundamental problem, dis-

cussed here, concerns the dimensions of communication

organizational researchers might measure and how this might

be done.

First, there is little consensus among writers about

what the relevant dimensions of organizational communication

are. Perhaps this is because researchers who have been

generally interested in communication come from many dis-

ciplines and thus have dissimilar views of the communication

domain. One result of this is that different communication

dimensions are rarely considered as they relate to one another. Obviously, the most important dimensions of organizational communication are probably not conceptually or operationally orthogonal. For example, it is difficult to discuss the accuracy of information flow in organizations without simultaneously considering the degree to which it is distorted. Within any domain one would not expect the components to be independent of one another when the real world is probably a cobweb of relationships among variables.

Second, there are problems involving methods of measurement which are feasible in real life organizations, particularly when one is attempting to measure a process rather than a static concept. Behavioral observations are often impossible to make at all, much less over time. Self-report forms suffer from response bias and frequently are phrased in such a manner that they take snapshots of process variables. It may be possible, however, to develop an instrument which allows respondents to summarize behavior over time hoping that many of the response errors will wash out by aggregating individual summaries.

With these two problems in mind what are the requirements for a useful initial measure of organizational communication? It should be capable of use over a wide variety of organizations and jobs. It should be short, easily administered, and easily scored. It should generate scores indicative of a number of dimensions of organizational

communication, and should be relatable to other aspects
of work. The measure should be relatively free of bias,
reliable in terms of internal consistency and stability
over time, and valid.

## Measurement of Communication Facets in
## Previous Organizational Research

Before looking at empirical investigations of
organizational communication one might consider approaches
used in related areas. The methodologies of studies con-
cerned with rumor transmission, innovation diffusion, and
dissemination of political information are sometimes
applicable to organizational communication research, and
are well reviewed elsewhere (Back, Festinger, Hymovitch,
Kelley, Schachter, & Thibaut, 1950; Rogers & Shoemaker,
1971; Sears, 1969). The massive findings from the labora-
tory network investigations are also well summarized
elsewhere (Collins & Raven, 1969; Shaw, 1964).

The early investigations of organizational commun-
ication concentrated on network aspects of information
flow and were conducted in the laboratory. As such they
added a didactic and not an empirical understanding of
real life organizational communication. More recently
relevant investigations in this area are field rather than
laboratory studies. Porter and Roberts (in press) review
these investigations commenting that "some six different

methods for gathering data have been utilized. . . . Rather surprisingly -- given their widespread use in many other areas of industrial/organizational psychology -- typical attitude questionnaires have been the primary technique for data collection in only three of the investigations. More widely used have been interviews . . . and self recording forms . . . (p.   )."

Figure 1 is a selective compilation of the kinds of laboratory and field methodologies which exist, the communication variables investigated, and other aspects of behavior related to them.  There is an attempt to standardize the disparate vocabularies of the researchers represented.  Hence, Figure 1 is an oversimplification of the dimensions of communication actually researched relevant to organizations, and fails to illustrate the diverse labels often attached by researchers to seemingly similar variables.

Figure 1 about here

In light of our previous discussion two questions are important:

1 - What kinds of communication facets have been or should be investigated?

and

2 - What efforts have been made to develop useful instruments for investigation.

Communication facets. Overwhelmingly, and not
surprisingly, most research attention has been given to
network aspects of organizational communication. Many
studies are concerned with who initiates a message and
where it goes. There is more emphasis on hierarchical
than on other aspects of directionality. The line-staff
functions of senders and receivers and the existence of
isolates, liaisons, and bridges, also have been the subject
of research attention. Undoubtedly, the explication of
organizational communication rests heavily on describing
operating networks in organizations.

Purposes of communication, its content, and the
modalities used for information transmission are also
popular in investigations of organizational communication.
Some attention has been devoted to information accuracy
and distortion, importance of information transmitted,
and transmission volume and speed. The other communication
variables in Figure 1 have received less empirical attention.

How might we extend the notions mentioned in Figure 1
in developing useful ways to measure organizational com-
munication? One possibility is to look more closely at
those communication aspects not yet very carefully differ-
entiated from one another. For some years there has been
considerable discussion of the phenomenon of gatekeeping
(Allen & Cohen, 1969; Breed, 1955; Lewin, 1966). With
the exception of two field studies (Allen & Cohen, 1969;
Breed, 1955), one of which does not provide empirical data,

gatekeeping has not been looked at in organizational life.
For example, the concept has not been refined and empir-
ically differentiated from facets of communication such
as summarization, or the propensity to withhold or distort
information, although researchers have thought some about
all of these dimensions.

Another possibility is that there are components
of communication which have not yet received any research
attention in organizations, and which should be considered
in any initial measurement which attempts to tap for
descriptive purposes a large proportion of the domain.
Some investigations cited in Figure 1 deal directly with
communication frequency and many more allude to it. These
discussions suggest that considerably more attention should
be given to a closely related aspect of communication,
general interaction level (perhaps an aggregate of commun-
ication activities in all directions), and to its cousin,
the desire to interact with other people on the job.
People's perceptions about the degree to which they interact
with or wish to interact with others are probably related
to their perceptions of the degree to which they feel over-
loaded with information. Finally, the industrial psycholo-
gists' concern with job satisfaction suggests a related
concern with satisfaction with communication at work, and
the degree to which it is related to other aspects of com-
munication.

Useful instrumentation. The sad state of affairs
is that none of the reported investigations discuss efforts
to develop reliable and valid instrumentation for measuring
organizational communication facets. A necessary pre-
requisite to instrument development is the ability to use
the same form in different situations. Since only Jacobsen
and Seashore    (1951), and Lawler, Porter, and Tenenbaum
(1968) provide their actual instruments, only their studies
are easily replicable. It would be helpful to have better
information about these instruments than is provided. For
example, the intercorrelations of the communication facets
measured in the Lawler, Porter and Tenenbaum study might
tell us a great deal. Perhaps "giving information" and
"giving instructions" are highly intercorrelated, implying
that the measurement of one is the measurement of the other.

If communication is a time dependent process, inves-
tigations should measure the same characteristics over
time. As indicated previously, if this cannot be done it
might be possible to develop a set of questions which ask
respondents to make their own summarizations over time.
Burns (1954), Kelly (1964), Sutton and Porter (1968), and
Wickesberg (1968) are the only researchers represented in
Figure 1 who apply some methodology which considers time.
Three of these studies use behavioral recording forms over
time and the fourth uses a relatively unstructured diary.

## General Methodology

Based on a review of past research efforts and our own extensions, an item pool of 189 Likert-type items was created to assess respondent perceptions of the following aspects of organizational communication; desire for inter-action with others, directionality and volume of contact (upward, downward and lateral), estimated accuracy of information received, summarization of information, propensity to withhold information (labelled here, gatekeeping), modalities used for communication, information overload, and satisfaction with communication in general. Communication purpose, content, importance and speed (all represented in Figure 1) were considered in initial instrument development, but later discarded because of the difficulty respondents had in answering questions about them.

In addition to these questions about communication, items were borrowed from Likert (1967) and Read (1962) to assess three non-communication variables considered relevant. These three variables, respondent's trust in superior, perceived influence of the superior, and respondent's mobility aspirations, have been found by a number of researchers (Cohen, 1958; Friedlander, 1970; Hurwitz, Zander, & Hymovitch, 1960; Jones, Gergen, & Jones, 1963; Loomis, 1969; Mellinger, 1956; O'Reilly & Roberts, 1973; Read, 1962; Zand, 1972) to considerably affect communication in organizations. Unfortunately, only Read (1962) reports the

intercorrelations of items supposedly measuring two of these dimensions (trust .39 to .68; influence -.07 to .62).

The 189 items in the pool were administered to 70 graduate students, all of whom had prior work experience. These students were asked to respond to the questions based on their experiences in some past or current job. Inter-correlations of the items were then used to reduce the item set. Items were retained which had high intercorrelations with other items ostensibly measuring the same facets and low intercorrelations with the rest of the item pool. A 60 item questionnaire resulted.

The 60 item version of the questionnaire (51 communication and 9 non-communication items) was administered to 86 mental health workers, at all job levels, on five health care delivery teams working in a large medical center. Their responses were subjected to a cluster analysis to further reduce the number of questionnaire items. The technique used, developed by Tryon and Bailey (1970), does not seek orthogonal item groups. It does select as definers of dimensions items most nearly independent of the definers of other dimensions. Clusters were retained for further consideration if communality estimates did not exceed 1.00, if they were not composed of doublets, and if they made conceptual as well as empirical sense. Two single communication items were included (one measuring overload and the other general satisfaction with communication) only after it was determined that these questions behaved appropriately

with regard to the rest. The question concerned with
satisfaction is a modification of the GM Faces scale
(Kunin, 1955). When this question was related to the
clusters it showed relationships to each cluster without
loading heavily on any one, suggesting that satisfaction
with communication in an organization is perceived to be
partly related to interaction, partly to accuracy, partly
to directionality of information flow, etc.

One cluster analysis of the 60 item version of
the instrument also included non-communication items.
Trust, influence, and mobility items defined separate
clusters and were then looked at independently. Concep-
tually trust, influence and mobility, should be more
independent of one another than are the communication
items. Consequently these nine non-communication items
were subjected to a factor analysis using a varimax rota-
tion. Three separate factors emerged. These items were
included in a test battery completed by 95 officers and
enlisted men in a U.S. military unit. The results are
reported in Table 1.

Table 1 about here

Based on these analyses the total instrument was
reduced to 35 items (see Appendix 1). The 35 items were
then scored to yield the dimensions discussed above. As
previously mentioned, overload and satisfaction are one

item measures. Similarly, questions concerned with modality
use are reported as individual items since it makes little
sense to combine them. A description of the communication and
non-communication dimensions is in Figure 2. The questions from
the instrument (Appendix 1) contributing to each index are also
indicated.

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Figure 2 about here

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In addition to the mental health workers, the 35 item
version of the questionnaire was administered to the military
sample referenced above, 54 emergency room and out-patient
clinic hospital personnel, 52 business managers from various
firms, and 179 respondents at various job levels in six United
Kingdom locations of a large financial institution. Cluster
analyses for the military and mental health samples showed no
appreciable differences. Means, standard deviations and Cronbach
alphas ( a measure of the internal consistency of the dimension) are
reported in Table 2 for the communication and non-communication
dimensions for all five samples. Note that within the set of
three samples using five point Likert-type items, the alphas
are relatively consistent. Differences in the means suggest that
it is possible to discriminate among organizations.

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Table 2 about here

_____


To provide test-retest reliability information,
the 35 item version of the instrument was administered
twice to 24 graduate business students (all with previous
job experience), and a second time to 42 of the original
52 managers.  The two administrations were three weeks
apart in both cases.  The test-retest reliabilities for
the ten indices and six individual items (modality use,
overload, and satisfaction with communication in general)
are reported in Table 3.  Nine of the ten indices have
reasonable test-retest reliabilities.


_____

Table 3 about here

_____


In the interest of greater differentiation of
communication problems, practitioners might find it more
beneficial to  use the items rather than communication in-
dices.  Test-retest reliabilities are available for the
items.  Obviously, they are not quite as high as for the
indices.


Validity


Figure 2 suggests that adequate criterion variables
might be devised for comparison with each of the

communication facets. For example, assessments of objective
accuracy from an information theoretic standpoint might be
compared to estimated accuracy. Sociometric measures of
influence might he made and compared to perceived influence, etc.
However, these and other criterion measures require seperate
reliability and validity assessments before they can be used
to validate the communication dimensions described in Figure 2.
Moreover, subjective respondent perceptions may be more important
than objective measures of the kinds of facets in Figure 2.
For example, a respondent's information processing behavior may
be more dependent on his perception of the accuracy of messages
he receives than on an objective measure of accuracy. These
two reasons, difficulty in obtaining objective criterion measures
and their potential irrelevance once obtained, warrant consideration
of more indirect validity assessments; construct, face, and a very
limited attempt at convergent-discriminant validity.

First, results of the cluster analyses show that inter-
item correlations among items within any index in the instrument
are higher than are the correlations among items forming different
indices. This provides some evidence for the construct
validity of the ten dimensions and increases confidence that
even similar appearing facets such as trust and influence, or
interaction and desire for interaction, can be successfull differen-
tiated from each other.

Second, individual questionnaire items appear to have face validity. For example, asking a respondent to differentiate his communication behavior with respect to superiors, subordinates, and peers, is a reasonable task. Questions concerned with use of various modalities are differentiable in a respondent's mind from those concerned with perceived accuracy of received information or satisfaction with communication. On the other hand, during the item development respondents stated that in their own minds they could not clearly differentiate among some other aspects of communication (for example, task and social information). Additional aspects of communication, such as the speed with which messages are sent, were also not sufficiently definable to be measured by a questionnaire.

Finally, in the spirit of convergent-discriminant validity, intercorrelations of nine communication and three non-communication dimensions with other similar and dissimilar measures are presented in Table 4 for the military sample. The other measures include assessments of overall job satisfaction (Kunin, 1955), supervisor's considerate leadership style (Stogdill & Coons, 1957), organizational competence and flexibility (Campbell, 1971), organizational commitment (Porter & Smith, 1970), and respondent's age and tenure.

Table 4 about here

Examination of Table 4 reveals some of the expected con-
vergence and discrimination. Education and tenure may be surrogates
for rank in military units. Thus, it was hypothesized that only
communication facets which change as a result of rank would be related
to education and tenure. Of the eighteen correlation coefficients
involving education and tenure three are significant. Education
is correlated with desire for interaction; men in similar ranks may
want to interact with one another. Job tenure is positively related
to amount of information passed downward and negatively related to
lateral information transmission. Higher ranked individuals are more
likely to have more subordinates; hence, pass more job related infor-
mation downward. Similarly, higher ranking members are apt to have
fewer opportunities for lateral information transmission. Perceived
influence of the superior ( a non-communication variable) is also
significantly correlated with tenure: if high tenure respondents are
of higher rank than low tenure respondents they are likely to have
even higher rank, influence supervisors.

Other relationships are also of the type expected. Trust
in superior, for example, is related to the respondent's overall
job satisfaction, perceived considerate leadership style, perceived
organizational competence and flexibility, and commitment to the organi-
zation, but not to tenure and education. The amount of information an
individual passes is significantly related to his overall job satisfaction
and to his perception of his superior as being considerate, but not
to other variables. Desire for interaction also shows appropriate

relationships with responses to other perceptions about the organization.
The negative relationship between information overload and overall
job satisfaction, and the positive correlation between communication
satisfaction and considerate leadership are also understandable.
Finally, the large number of significant relationships among overall
job satisfaction and communication and non-communication indices seem
logical.  The negative relationship (upward directionality of infor-
mation flow and satisfaction) may mean that in military units it is
likely that information transmitted upward could have negative
effects for the sender and that downward information transmission is
most often in the form of orders or directives which are relatively
safe to send.  In sum, while the results presented here are in no
way definitive, they do provide a crude, first approximation of
convergent-discriminant validity and increase confidence in the
indicies.

Further examples of convergence and discrimination are obtainable
by comparing perceptions about communication by people in jobs dependent
upon information transmission (such as dispatchers and operations officers
in the military unit) with those of people occupying jobs not as sensitive
to information transmission (such as mechanics, etc.).  The results of
these comparisons are not reported here, but suggest that communication
facets measured by the questionnaire can, in general, discriminate
perceptions about communications for occupants of jobs dependent on
information from those not so dependent.  The former are more discrimina-
ting among the communication dimensions (they think more frequently
about them).

## Conclusions

Obviously much work is left to be done in developing

a measure which can describe various facets of organizational communication. The data reported here should be viewed as an initial attempt in this direction.

A research effort is being made to extend the facets within the instrument, both in terms of the number of items measuring each facet, and the development of additional facets to adequately cover the communication domain. Within that domain there should also be multiple-methodological approaches to measurement.

Future research using the reported instrument should test its generalizability and discriminability across more and different kinds of organizations. More will be understood about the instrument when it is used in different cultural and sub-cultural settings. Within any single organization researchers might look for job level and other subgroup differences to see how various organizational participants differentially perceive communication in ther organizations. With valid indices, certain differences should appear.

Finally, the communication facets discussed here must be examined more rigorously in relation to other organizational variables. This process will increase our understanding about how communication is important in organizational life and about what comprises "good" communication. An obvious need is to relate measures of communication to objective rather than perceptual or attitudinal criteria, such as performance, turnover, etc. All of these efforts should result in data which adequately assess convergent-discriminant validity. Since the data reported here are purely exploratory efforts at developing an easily completed descriptive measure of organizational communication they should be supplemental by additional research efforts.

## Footnotes

[1] This study was partially supported by Public Health Service Grant MH22054-01 and Office of Naval Research Grant N000314-69-A-0200-1054.

[2] This question eliminated based on statistical analyses.

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Appendix 1

# COMMUNICATION IN YOUR ORGANIZATION

This is a series of questions about how people communicate at work. <u>Imagine a typical week at work on your current job,</u> and answer the questions accordingly. Please attempt to answer all the questions.

Some questions ask you to fill in an answer. Other have seven point scales on which to answer. On these questions, please check the point that represents most closely how you feel. For instance, to the question, "How rich do you want to be?" you might answer:

Very poor |—|—|—|—|—✓|—|—| Very rich
           1  2  3  4  5  6  7

-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
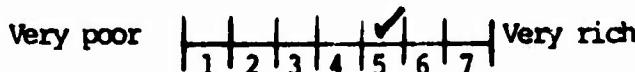
How free do you feel to discuss with your <u>immediate superior</u> the problems and difficulties you have in your job without jeopardizing your position or having it "held against" you later?

(1)  Completely free |—|—|—|—|—|—|—| Very cautious
                 1  2  3  4  5  6  7
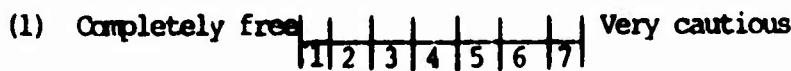
How often is your <u>immediate superior</u> successful in overcoming restrictions (such as regulations or quotas) in getting you the things you need in your job, such as equipment, personnel, etc?[2]

(2)  Always                               Never
      successful  |—|—|—|—|—|—|—|  successful
                   1  2  3  4  5  6  7
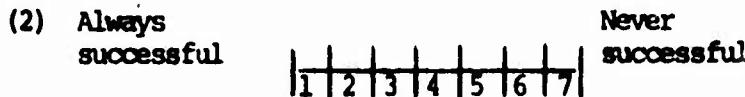
<u>Immediate superiors</u> at times must make decisions which seem to be against the interest of their subordinates. When this happens to you as a subordinate, how much trust do you have that your <u>immediate superior's</u> decision was justified by other considerations?

(3)  Trust                              Feel very
      completely  |—|—|—|—|—|—|—|  distrustful
                   1  2  3  4  5  6  7
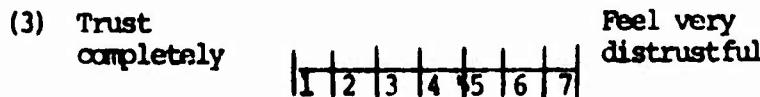
In general, how much do you feel that your <u>immediate superior</u> can do to further your career in this organization?

(4)  Much          |—|—|—|—|—|—|—|  Little
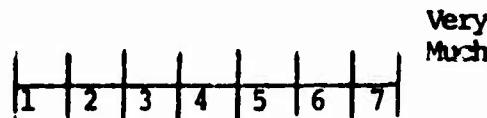                 1  2  3  4  5  6  7
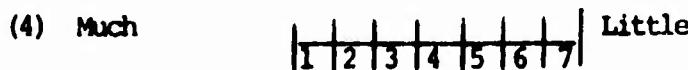
How much weight would your <u>immediate superior's</u> recommendation have in any decision which would affect your standing in this organization, such as promotions, transfers, etc.?

(5)  Important    |—|—|—|—|—|—|—|  Unimportant
                 1  2  3  4  5  6  7
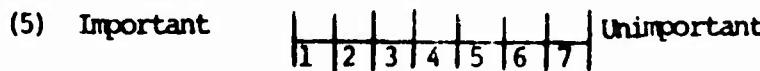
As part of your present job plans, do you want a promotion to a higher position at some point in the future?

(6) Content
as I am

|1 | 2 | 3 | 4 | 5 | 6 | 7|

Very
Much

How important is it for you to progress upward in this organization?
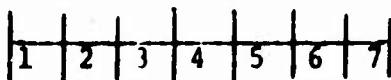
(7) Not
important

|1 | 2 | 3 | 4 | 5 | 6 | 7|
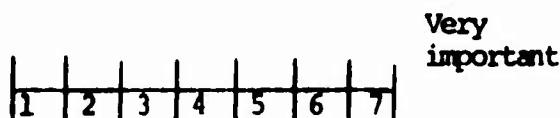
Very
important

To what extent do you have confidence and trust in your immediate superior regarding his general fairness?

(8) Have little
confidence
or trust

|1 | 2 | 3 | 4 | 5 | 6 | 7|

Have complete
confidence and
trust

While working, what percentage of the time do you spend interacting with:

(9)  Immediate superiors  _____ %

(10) Subordinates  _____ %

(11) Peers (others at the
     same job level)  _____ %

_____
100%

Of the total time you engage in communication while on the job, about what percentage of the time do you use the following methods to communicate:
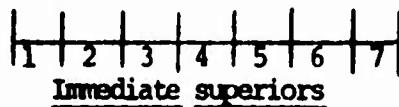
(12) Written  _____ %

(13) Face-to-face  _____ %

(14) Telephone  _____ %

(15) Other _____ _____ %
          (specify)
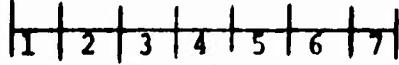
_____
100%

When receiving information from the sources listed below  how accurate
would you estimate it usually is:

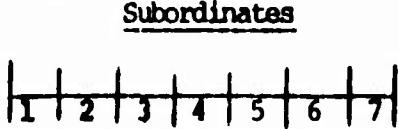(16)  Completely                                             Completely
      accurate                                            inaccurate

|1| 2| 3 | 4 | 5 | 6 | 7|

Immediate superiors

(17)  Completely                                             Completely
      accurate                                            inaccurate

|1| 2 | 3 | 4 | 5 | 6 | 7|

Subordinates

(18)  Completely                                             Completely
      accurate                                            inaccurate

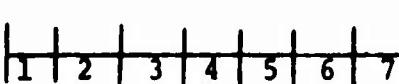|1| 2 | 3 | 4 | 5 | 6 | 7|

Peers-others at your job level

Do you ever feel that you receive more information than you can efficiently
use?

(19)  Never                                      Always

|1| 2 | 3 | 4 | 5 | 6 | 7|

Of the total time you spend receiving information at work, what percentage
comes from:

(20)  Immediate superiors          _____%

(21)  Subordinates                  _____%

(22)  Peers (others at the       _____%
      same level)

                                     _____

                                     100%

Of the total time you spend sending information at work, what percentage
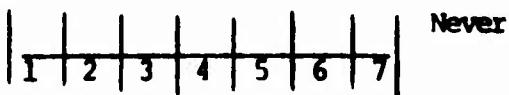goes to:

(23)  Immediate superiors          _____%

(24)  Subordinates                  _____%

(25)  Peers (others at the       _____%
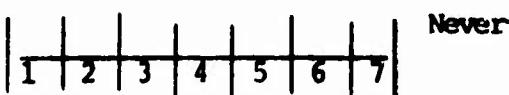      same level)

                                       100%

When transmitting information to __immediate superiors__ , how often do you summarize by emphasizing those aspects which are important and minimizing those aspects which are unimportant?

(26)   Always   |1|2|3|4|5|6|7|   Never

When transmitting information to __subordinates__, how often do you summarize by emphasizing those aspects which are important and minimizing those aspects which are unimportant?

(27)   Always   |1|2|3|4|5|6|7|   Never

When transmitting information to __peers__ (others at your job level), how often do you summarize by emphasizing those aspects which are important and minimizing those aspects which are unimportant?
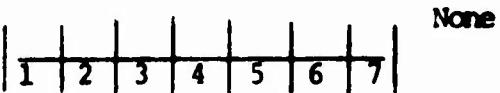
(28)   Always   |1|2|3|4|5|6|7|   Never
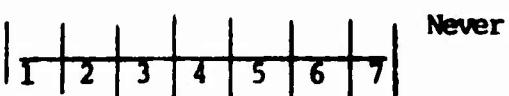
Of the total amount of information you receive at work, how much do you pass on to:

__Immediate superiors__:

(29)   All   |1|2|3|4|5|6|7|   None

__Subordinates__:

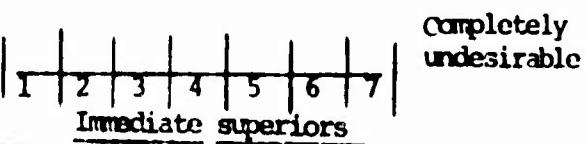(30)   All   |1|2|3|4|5|6|7|   None

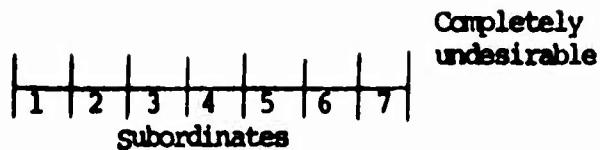__Peers__ (others at your own job level)

(31)   All   |1|2|3|4|5|6|7|   None
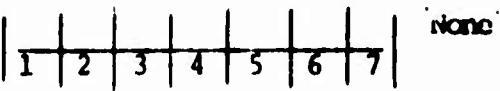
How desirable do you feel it is in your organization to interact frequently with:
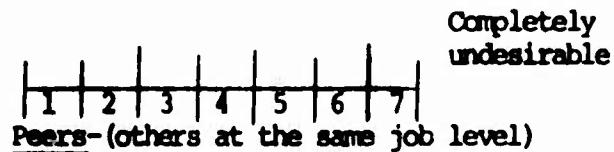
(32)   Very desirable   |1|2|3|4|5|6|7|   Completely undesirable

__Immediate superiors__

(33) Very                                                    Completely
     desirable                                               undesirable

```
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
```
                    Subordinates

(34) Very                                                    Completely
     desirable                                               undesirable

```
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
```
       Peers-(others at the same job level)

Put a check under the face that expresses how you feel about communications
in general, including the amount of information you receive, contacts with
your immediate superior and others, the accuracy of information available,
etc.

☐          ☐          ☐          ☐          ☐          ☐          ☐

Figure 1.    Communications and other behavioral

facets previously investigated.

| Author | Method | Communication facets | Related to . . . |
|---|---|---|---|
| Allen & Cohen (1969) | Field: Questionnaires and interviews, N=38 in 1st R & D lab, N=28 in 2nd R & D lab. | -Information flow in R & D lab<br>-Information sources<br>-Social relations<br>-Technical relations | |
| Bell, Cheney, & May (1972) | Laboratory: Manipulation, direct observations and questionnaire response. 70 male and 70 female = 140 subjects. | -Modality<br>-Sex of subject | -Satisfaction<br>-Task performance |
| Berlo, Farace, Monge, Betty, & Danowski (1972) | Field: Interviews, Office of Civil Defense employees. | -Communication structure: Interdependence of sub-groups, isolates, liaisons and bridges<br>-Function of message<br>-Group connectedness and dominance | -Group size |
| Burns (1954) | Field: Behavioral self-recording form, N=4 managers. | -Content: Decisions, in-structions, advice, in-formation<br>-Hierarchy of contact<br>-Initiator<br>-Modality use<br>-Purpose: Giving, obtaining, systematizing, recording, informational | -Activity content: sales, personnel, R & D, etc.<br>-Location of activity<br>-Time spent in activity |

| Author | Method | Communication facets | Related to . . . . |
|---|---|---|---|
| Cohen, Robinson, & Edwards (1969) | Laboratories: Manipulations and direct observations, N=44 (4-17 member organizations). | -Centralized to decentralized subgroups<br>-Embeddedness of network | -Emergent problem solving systems<br>-Job satisfaction<br>-Organizational (and subgroup performance (time to answer, # of errors, # of changes in answers)<br>-Satisfaction with group |
| Cook (1968) | Laboratory: Manipulations and questionnaires, N=120 students,<br>Field: Questionnaires, N=154 managers in 59 companies. | -Frequency of feedback about performance | -Attitude toward task<br>-Level of aspirations |
| Davis (1953) | Field: Ecco analysis using questionnaires, N=67 managers. | -Communication between line and staff<br>-Content<br>-Distortion<br>-Hierarchy of contact<br>-Individuals not passing information on<br>-Initiator<br>-Isolated communicants<br>-Modality use<br>- factor<br>-Propensity to communicate<br>-Speed of communication | |
| Davis (1968) | Field: Ecco analysis using questionnaires, N=116 managers. | -Initiator<br>-Knowledge of communication content: By level and by department | |

32

| Author | Methods | Communication facets | Related to . . . |
|---|---|---|---|
| Graves (1972) | Field: Diary and questionnaire, N=53 managers in 3 organizations. | -Content<br>-Duration<br>-Information purpose: giving or receiving instructions or information or socializing<br>-Location importance | -Informal status relationships |
| Jacobsen & Seashore (1951) | Field: Interview and questionnaire, N=204 clerical and secretarial. | -Content<br>-Frequency of contact<br>-Hierarchy of contact<br>-Importance<br>-Individual position in network<br>-Reason<br>-Subgroups in communication | -Status differentials<br>-Power relationships |
| Kelly (1964) | Field: Activity sampling by questionnaire, N=4 managers. | -Hierarchy of contact | -Activity content: Programming, technical<br>-Time spent in various plant locations |
| Lawler, Porter, & Tenenbaum (1968) | Field: Behavioral self-recording form (adapted from Burns), N=34 middle, 70 lower managers in 5 organizations. | -Hierarchy of contact<br>-Manager interaction: Self and other initiated<br>-Modality use<br>-Nature of activity<br>-Purpose: Giving, receiving, or evaluating information or instruction | -Attitudes towards interaction |

| Author | Method | Communication facets | Related to . . . |
|---|---|---|---|
| MacDonald & Farace (1972) | Field: Interviews, N=600 first line supervisors and non-supervisory employees. | Communication structure:<br>Interdependence of subgroups, isolates, liaisons and bridges<br>-Frequency<br>-Function of or message attributes: Production, innovation, self and system maintenance<br>-Importance<br>-Group connectedness and dominance<br>-System level-reciprocation | -Turnover<br>-Employee success measures |
| O'Reilly & Roberts (1973) | Laboratory: Manipulation, observation, questionnaire, N=80 students. | -Gatekeeping of important or unimportant and favorable or unfavorable information<br>-Satisfaction with communication<br>-Total information passed<br>-Upward communication | -Interpersonal trust<br>-Mobility aspirations<br>-Perceived influence of receiver |
| Read (1962) | Field: Interview, N=52 superiors, 52 subordinates in 3 organizations. | -Upward communication accuracy | -Influence<br>-Interpersonal trust<br>-Mobility |
| Snadowsky (1972) | Laboratory: Manipulation, direct observation, post-experimental questionnaire, N=320 subjects (80-4 man groups). | -Message volume<br>-Time communicating | -Authoritarian/non-authoritarian leadership<br>-Leader satisfaction<br>-Organizational structure<br>-Performance rate<br>-Task complexity |

| Author | Method | Communication facets | Related to . . . |
|---|---|---|---|
| Sutton & Porter (1968) | Field: Ecco analysis using questionnaire, N=79 employees of regional tax office. | -Hierarchy of contact<br>-Liasons<br>-People not passing information<br>-Task relevance of content | -Personality characteristics |
| Wade (1968) | Field: Interview, Bureau of Budget personnel. | -Difficulty of obtaining needed information<br>-Number of face-to-face contacts<br>-Number of phone calls received and initiated | -Enjoyment of agency contacts<br>-Propensity to overlook agency rules to complete work |
| Wager (1972) | Field: Questionnaire, N=1,544 managers. | -Communication role of information and opinion seeker or giver | -Hierarchical status |
| Webber (1968) | Field: Content analyses, job and work flow descriptions, interviews, N=54 managers in 2 organizations. | -Communication initiation<br>-Time spent receiving information<br>-Volume verbal interaction | -Leadership style<br>-Personality characteristics |
| Weinshall (1966) | Field: Diary, interviews, observations and questionnaires, N=50 managers. | -Consensus about character of interaction<br>-Consensus about existence of interaction<br>-Dominance<br>-Initiation content: Topic, decision, instruction, advice, information<br>-Modality use<br>-Time of interaction | |

| Author | Method | Communication facets | Related to . . . |
|---|---|---|---|
| Wickesberg (1968) | Field: Daily log of all communication, N=91 businessmen from 35 organizations. | -Communications purpose: Information , approval or instructions given or received, problem solving, non-business<br>-Frequency of communication<br>-Modality use<br>-Size of network<br>-Time spent communicating | |
| Zaenglein & Smith (1972) | Field: Questionnaire, N=1443 staff from 17 hospitals. | -Communication directionality | -Coordination<br>-Decision-making<br>-Hospital goals<br>-Influence or power<br>-Job satisfaction<br>-Tension level among staff |
| Zand (1972) | Laboratory: Obser-vations, questionnaire, | -Conversation content: Defensiveness, openness, antagonism | -Interpersonal trust |

Figure 2.  Description of communication and

and non-communication indices and

questions contributing to them.

| Index | Question Numbers (Appendix 1) | Description |
|---|---|---|
| Trust | 1,3,8 | Respondent's trust in his superior |
| Influence | 4,5 | Respondent's perception of how much influence his superior has |
| Mobility aspirations | 6,7 | Degree to which the respondent feels that future promotions are important |
| Desire for interaction | 32,33,34 | General indicator of the degree to which the respondent desires to interact with others in the organization. |
| Directionality -Upwards | 9,20,23 | General indicator of the amount of contact the respondent has with his superior |
| Directionality -Downward | 10,21,24 | General indicator of the amount of contact the respondent has with his subordinates |
| Directionality -Lateral | 11,22,25 | General indicator of the amount of contact the respondent has with others at his job level |
| Accuracy | 16,17,18 | Respondent's estimate of how accurate he perceives the information he receives to be |
| Summarization | 26,27,28 | Estimate of how often information is summarized before it is passed on |
| Propensity to withhold information | 29,30,31 | Estimate of how much information the respondent receives he actually passes on |
| Modality -written | 12 | Percentage of time the respondent uses this modality to transmit information at work |
| Modality - face-to-face | 13 | Percentage of time the respondent uses this modality to transmit information at work |
| Modality - telephone | 14 | Percentage of time the respondent uses this modality to transmit information at work |
| Overload | 19 | How often the respondent feels he receives more information than he can use |
| Satisfaction | 35 | Indicator of how satisfied the respondent is with communication in general in his organization |

Table 1.  Varimax factor loadings for items
          assessing trust in superior, per-
          ceived influence of superior, and
          subordinate's mobility aspirations
          for a sample of 95 military subjects.

| Items[1] | Varimax Factor Loadings (N=95) | | |
|---|---|---|---|
|  | <u>1</u> | <u>2</u> | <u>3</u> |
| 1.  Trust | .<u>68</u> | .22 | .13 |
| 2.  Trust | .<u>76</u> | .08 | .41 |
| 3.  Trust | .<u>79</u> | .23 | .01 |
| 4.  Perceived Influence | .28 | .30 | .<u>81</u> |
| 5.  Perceived Influence | .14 | .16 | .<u>87</u> |
| 6.  Mobility Aspirations | .12 | .<u>90</u> | .21 |
| 7.  Mobility Aspirations | .23 | .<u>88</u> | .20 |

Proportion of communality     .<u>26</u>        .<u>26</u>       .<u>24</u>
accounted for:

[1]Items scored on seven point scales

Table 2. Means, standard deviations and croned alphas for indices and items for five samples.
(Note: A revision of the questionnaire including additional items and indices as well as information about directionality of contact is available upon request).

| Indices | Number of Items | Mental Health agency (n=1??) | | | Workers (n=52) | | | Financial Institution (n=79) | | | Military Unit (n=55) | | | Hospital Voters* (n=54) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | X̄ | SD | α | X̄ | SD | r | X̄ | SD | α | X̄ | SD | α | X̄ | SD | α |
| Trust | 3 | 4.7 | 2.0 | .62 | 6.8 | 2.3 | .68 | 6.5 | 2.7 | .79 | 8.6 | 3.6 | .64 | 12.2 | 5.6 | .86 |
| Influence | 2 | 5.0 | 2.0 | .69 | 4.7 | 1.9 | .64 | 4.5 | 2.1 | .77 | 7.3 | 3.7 | .74 | 8.6 | 3.3 | .53 |
| Mobility | 2 | 5.0 | 2.6 | .82 | 2.9 | 1.4 | .74 | 3.6 | 2.1 | .81 | 10.9 | 4.0 | .87 | 10.5 | 4.1 | .92 |
| Desire for Interaction | 3 | 6.3 | 2.2 | .59 | 6.4 | 1.7 | .29 | 6.0 | 2.4 | .74 | 8.7 | 3.3 | .71 | 9.3 | 4.1 | .60 |
| Directionality of contact Upward | 3 | 6.1 | 4.6 | .76 | 10.0 | 6.0 | .65 | 12.5 | 6.8 | .70 | 11.1 | 4.8 | .39 | 7.7 | 4.6 | .21 |
| Directionality of contact Downward** | 3 | 5.7 | 5.6 | .87 | 6.5 | 5.7 | .84 | 6.5 | 7.6 | .88 | 9.7 | 6.1 | .69 | 6.0 | 5.0 | .41 |
| Directionality of contact Lateral | 3 | 11.0 | 5.6 | .71 | 11.1 | 6.6 | .70 | 8.9 | 6.9 | .77 | 7.9 | 5.9 | .72 | 8.9 | 5.6 | .41 |
| Estimated accuracy of received information | 3 | 7.1 | 1.8 | .71 | 6.6 | 1.6 | .59 | 6.5 | 1.9 | .62 | 9.8 | 2.8 | .62 | 11.1 | 3.6 | .65 |
| Propensity to summarize information | 3 | 7.4 | 2.0 | .61 | 7.7 | 2.5 | .72 | 7.1 | 2.4 | .64 | 8.7 | 3.8 | .85 | 9.6 | 4.3 | .88 |
| Propensity to withhold information | 3 | 8.3 | 2.1 | .64 | 9.1 | 1.5 | .16 | 8.4 | 2.4 | .32 | 9.6 | 3.2 | .53 | 10.7 | 4.3 | .18 |
| Modalities used for communication*** | | | | | | | | | | | | | | | | |
| Written | 1 | 0.8 | 1.1 | | 23.6 | 19.9 | | 2.8 | 2.6 | | 1.0 | 1.4 | | 16.0 | 18.5 | |
| Face-to-face | 1 | 7.0 | 1.9 | | 51.1 | 22.8 | | 4.7 | 3.2 | | 7.3 | 1.8 | | 62.7 | 27.5 | |
| Telephone | 1 | 1.2 | 1.2 | | 22.? | 14.3 | | 2.0 | 1.8 | | 0.7 | 1.0 | | 18.5 | 19.0 | |
| Other | 1 | 0.3 | 0.6 | | 2.9 | 6.3 | | 0.9 | 1.5 | | 0.4 | 1.1 | | — | — | |
| Information received | 1 | 2.1 | 0.9 | | 2.8 | 1.3 | | 2.3 | 1.2 | | 2.8 | 1.6 | | 3.3 | 1.8 | |
| Satisfaction with organization in general | 1 | 3.4 | 0.9 | | 2.1 | 0.7 | | 2.7 | 1.0 | | 3.9 | 1.5 | | 3.9 | 1.7 | |

*Items scored on seven point scales. Other samples use five point scales.

**Scoring done only for respondents with subordinates.

***Modality item scores for the mental health agency, financial institution, and military sample were converted from percentage responses to a 10 point scale. Responses for the samples of managers and hospital workers are reported as percentage answers.

Table 3. Test-retest reliabilities. Three week interval between test and retest.

| Index Description | Number of Items | Test-retest correlation | |
| --- | --- | --- | --- |
| | | Students (N=24) | Managers (N=42) |
| Trust | 3 | .71 | .69 |
| Perceived influence of superior | 2 | .49 | .62 |
| Mobility aspirations of respondent | 2 | .77 | .80 |
| Desire for interaction | 3 | .66 | .76 |
| Directionality of contact- Upward | 3 | .84 | .87 |
| Directionality of contact- Downward | 3 | .82 | .83 |
| Directionality of contact- Lateral | 3 | .82 | .76 |
| Estimated accuracy of received information | 3 | .82 | .61 |
| Propensity to summarize information | 3 | .35 | .37 |
| Propensity to withhold information | 3 | .83 | .78 |
| Modalities for communication | | | |
| Written | 1 | .44 | .63 |
| Face-to-face | 1 | .86 | .41 |
| Telephone | 1 | .39 | .58 |
| Other | 1 | --- | .83 |
| Information overload | 1 | .46 | .69 |
| Satisfaction with communication in general | 1 | .60 | .73 |